GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

ILLUSTRATED SEMI-MONTHLY

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STAPLE-SPACED frames don't go in this country except for end-spacing. Perhaps the right kind of spacers would go better than staples. In Europe, nails with heads of such thickness as to be driven automatically to the proper depth have been regularly quoted in price lists for years, but you can't get them in this country.

A LITTLE KINK that I don't remember seeing in print may be worth mentioning. When bees will not be easily shaken or pounded off a comb, and you don't care to get a brush, try this: Hold up the frame with the left hand by one end of the top-bar, and while thus suspended pound on the top of the top-bar near the other end with the ball of the right hand; then reverse ends and pound again.

WHAT YOU SAY, Mr. Editor, p. 242, raises the question, "Under what circumstances would you advise shipping comb honey by express rather than freight?" [In my next to the last paragraph I intimated what those circumstances might be. The great bulk of comb honey goes by freight because express is too expensive. But honey may be shipped by express when the distance is short and the weight light.—ED.]

"THERE IS NO trouble about sending bees by freight," and "it is not practicable to send bees by express, except in nucleus or one-colony lots," p. 246. But unless rulings have changed, you can't send bees by freight except in car-lots on some roads. [Many roads will take less than a carload of bees by freight if prepaid and at owner's risk. Railroad companies do not like to take perishable property like bees, and undertake to get them to destination in good order unless the freight is prepaid or a man goes with them to see that they are properly cared for. No charge is made for carrying the man who takes care of the bees.—ED.]

FRIENDS, please don't get to quarreling whether swarms should be shaken before or after queen-cells are started. What's right for one may be wrong for another. In my own case I wouldn't think of shaking in the home apiary till cells were present. In an out-apiary with a small number, where I wished to limit the number of visits, I'd shake 'em all when it suited me, cells or no cells. [We must be governed by conditions.—ED.]

PROF. F. C. HARRISON, of Canada, has an article in the French bee journal, *Revue Internationale*, in which he gives a table, evidently prepared with no little care, comparing the characteristics of *B. mesentericus vulgatus* (Fluegge), *B. mesentericus (vulgaris?)* (Dr. Lambotte), and *B. alvei* (Chesh. and W. Cheyne). He thinks the identity of *B. alvei* with the more common form is far from being proven. It will be a relief to believe that it is not possible for a microbe existing everywhere to assume at some inauspicious moment a form that we so much dread.

AS I READ what you say in last GLEANINGS, Bro. A. I. Root, I can't help heartily wishing you were here. Every night for a month you'd see all the pastors of Marengo on the same platform in the tabernacle in the most perfect harmony, while Evangelist W. A. Sunday preaches to an audience sometimes numbering more than a thousand. After he has talked for an hour and a half in a perfect torrent, it seems only the length of an ordinary sermon. If he ever preaches within a hundred miles of Medina it will pay you to go and hear him. If you'll come while he's here, Mrs. Miller will let you have that north room to nap in all day long. [That north room is most delightful. I always sleep soundly at the Miller home.—ED.]

ILLINOIS bee-keepers, don't fail to write at once to your law-makers about that foul-

brood bill if you haven't already done so, unless you can do as I did, button-hole your man when he is at home and get him to promise the right thing. [Yes, yes! No bill can be passed unless the representatives can be made to feel that their constituents want the measure. Besides beekeepers writing themselves, they should go to influential men and politicians in their vicinity, and get them to write to their Senators or Representatives, or both. One who has a little "political pull" will have ten times as much influence as one who has little or nothing to do with politics.—ED.]

G. C. GREINER is a practical sort of man, but I couldn't puzzle out how he moves 40 per cent (not 4 per cent, as the types make it) of his hives in straight rows so as to get them in close rows of five each, although I worked on it for some time with pieces of paper numbered. Then when I got to the footnote I was as badly puzzled to understand how the editor could easily get his group of five hives into a straight row. But there is this probable difference in the two cases: Friend Greiner has done his (even if I can't), and the editor has never tried his. [Why not have a group of five hives in a row if you want them? What is to hinder? You can have five in a straight row in a group as easily as you can have three. Yes, I have tried the plan outlined. You must have got a wrong idea in your head some way.—ED.]

YE EDITOR explains, p. 244, how 75 cts. per colony is cleaned up by having shallow frames and feeding sugar at the close of the season. I wish H. R. Boardman would tell us whether he can or can not clean up as much with deeper frames and feeding sugar before the beginning of the season. [But you are introducing a new condition. I was not talking about feeding before the harvest, but of the relative difference between deep and shallow frames, both sets of frames to be treated exactly alike, except in the matter of feeding afterward. Any colony on deep or shallow frames will produce more comb honey, especially if the season be short, if the brood-nest is filled with sugar syrup so that new honey, when it does come in, will have to go into the supers direct. If we are going to make comparative tests, the conditions under which each one is made should be exactly the same prior to the harvest.—ED.]

WILMON NEWELL has blazed a new track by coming out plainly on p. 241 and condemning that nonsense about an umbilical cord in queen-cells. I don't know whether our scientific men think it beneath their dignity, or whether they're afraid of getting into trouble by it, but it seems to be a rule with them never to say a word against any glaring error, unless it comes from some other scientist. Rev. W. F. Clarke said bees dropped poison from their stings into honey, and used their stings as trowels to work wax, and I don't remember seeing a word against it from any scientist. Prof. McLean said he fertilized queens by hand, and no one had the backbone to challenge the statement. So I take off my hat to the Texan entomologist. But when he says he strongly suspects that Dr. Gallup *has* discovered a food-carrying tube, I suppose it may be permitted one of the laity to strongly suspect that nothing at all has been discovered that was not known before. [Mr. Newell is the right man in the right place. He is one from whom we shall hear more later. Besides having a scientific training, he is intensely interested in bees. ED.]

YOUR PLAN of stealing a march on an obstreperous colony, Mr. Editor, p. 241, by grafting their queen-cells with choice larvæ, is good. You may save a week's time over that plan if you happen to have a young queen just hatched. Here's what I *think* is true: A young queen just out of the cell, if she has not been imprisoned in the cell by the bees, will be kindly received in *any* colony, no matter whether it has a laying queen, laying workers, or what not. If the colony has a satisfactory queen, this young queen will be killed as soon as she is old enough, perhaps when a day or so old; but in all other cases she will assume control. [I know a young queen just hatched will be more readily accepted than one a few hours old; and when introducing virgins we also prefer to have them when they are downy, young, and somewhat feeble. They then seem to elicit the sympathy of the bees, which immediately go to caressing. But, doctor, if I remember correctly, I tried to give to the obstreperous colony to which I referred a young virgin as well as cells. But they had their dander up, and proposed to do things in their own way. The handling of the virgin possibly gave the scent of a human being to her, and that was sufficient reason to kill her, and they did instanter.—ED.]

YOU SAY, Mr. Editor, p. 224, you have seen stings lodged in the body of a balled queen. Yes, you have seen a queen stung to death that had been in a ball. But did you ever see a queen stung *while* she was in the ball? I don't know, but I *think* a queen is never stung while she is in the ball, and I much doubt the physical possibility of such a thing. If the bees sting a queen while in a ball, why should they leave her unstung an hour or more before giving her the fatal stab? Did you ever know a queen to be stung in a ball if the ball was thrown into cold water? Weren't the cases in which you saw the queen stung those in which you poked or smoked the bees away from the queen enough so that one of them could sting her? Left entirely to themselves, do you believe the bees could sting a balled queen if they would? Do you believe they would if they could? In a case in which you have not found the balled queen till she was dead, did you ever find that such a queen had been stung? Your reasoning as to the improbability of a

queen being suffocated in a ball is all right. [I do not see how it is possible to know whether the queen is stung when she is in the ball. But I remember once pulling a ball to pieces and finding the queen almost lifeless, with a sting in her side. Possibly she was stung before she was balled. It is true that, when the bees ball a queen, the tails are out and the heads in, as if they were trying to get hold of her and pull her to pieces. We have had one queen crippled by having one and possibly two legs pulled off. After her experience she would fight any bees that showed fight, and we could introduce her to any hive. She was a regular tartar. We used to pick her up and give her to a queenless colcolony. They would pitch into her, but she would meet the onslaught. We would close up the hives, and in a few days she would be laying as serenely as ever. The trouble with average queens is, they will throw up their legs in utter helplessness, and squeal; and that is enough to make almost any bee enraged.—ED.]

AFTER TALKING about some changes that should be made regarding N. B. K. A. affairs, page 225, you say, Mr. Editor, that "the time to talk about this matter is not now, but some three or four months before the next election." I don't know, I don't know. I don't believe we'd get any too much light upon it if we began right now. [But is it not true that bee-keepers are tired of this? Would it not be a relief to drop the least suggestion of our old troubles for the time being, then when cool sober judgment reigns supreme we can discuss this matter better? If we go to talking publicly about the constitution now, *we* shall discuss it all summer; and I am sure we will disgust most of our readers, who do not know any thing about the constitution, and care less. Members of the National Association constitute but a small percentage of the subscribers of the average bee paper, and there is probably not over a tenth of the membership itself that will be interested even then. The place to discuss this is in committee, or by actual correspondence *among those who are interested*, or are by experience competent to advise; then when the crude ideas are evolved into something tangible, present it to the readers of the bee papers next fall. There is another thing: If we go to discussing the constitution now we shall put too much emphasis on those features of the old constitution that were the cause of "our late unpleasantness," and very likely some other important things that may lead to future trouble will be slurred over or omitted. I am firmly convinced that bee-journals are not the place to discuss constitutions — at least just now. But I would agree with you that the Board of Directors and the Executive Committee should take the matter up immediately, for it will take time to carry this thing through by correspondence.—ED.]

The following beautiful and graceful tribute to the memory of the Rambler comes from my friend Dr. Frederick Webley, of Santa Rosa, Cal. I have never seen the doctor, but I call him "friend" on account of some pleasant correspondence from him. He will be remembered as the author of "The Humming of the Bees," page 652 of last year.

Good by, Rambler!
Oft have we fared together,
In pleasant and in stormy weather—
You with one constant quest in mind,
A land of honey and a home to find.
Lost are the tales, the lore you had to tell,
Of nature and the craft you loved so well.
Good by.
On this last ramble, fare you well;
Where you have gone; no longer need you roam.
There is the land of promise and of home.

There is to be a great international apicultural exposition in Vienna, Austria, beginning April 4, and lasting till the 26th. Every thing pertaining to bees that can be found by ransacking the different countries of Europe will be on exhibition. It is under the auspices of the Emperor Francis Joseph, one of the most liberal and progresive rulers of Europe. His wife, who was murdered two years ago in Italy by an anarchist, was a very active friend of all that pertained to the welfare of her people. It is a pity we can not have a Dadant or a Miller to make a report for us, for it will doubtless be a very interesting affair.

Since giving the names of the principal bee journals published in French and German, I have found the following additional ones, most of which do not come to this office. It is really surprising to see what a vast literature the bee has gathered around itself.

Bienenvater aus Boehmen, Tetschen, Austria.

L'Abeille et sa Culture, Ampsin, Belgium.

De Bieenvriend, St. Ghislain, Belgium (Dutch).

Die Bie, Herenthals, Belgium (Dutch).

Abeille de l'Aisne (French), address unknown.

Bulletin de Rucher des Allobroges, address unknown.

L'Abeille Luxembourgeoise, French.

L'Apicoltore, Milan, Italy. This last is one of the greatest and best bee journals published in any land.

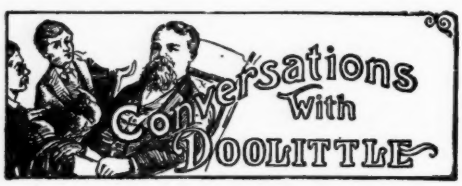
Swedish Bee Journal, Jampoking, Sweden.

I was just about to express a regret that Russia was not represented in bee journal-

ism when a fine sample of what I wanted was laid on my desk. It is called *Pchelovodnie Listork*. The Russians still use the Greek alphabet, thus causing their books to have a very strange appearance to us. The kindred people, such as Poles, Bohemians, and Slavs, use the common Roman letter, but the Russians still use Greek. This is all caused by the latter being Greek Catholic and the others Roman Catholic. But Russia is fast forging to the front, and now has at least one bee journal that, in outward appearance at least, is equal to any published.

By the way, a Mr. Titoff is working in this establishment at the present time, and will spend about two years here in learning all he can about bees and hive manufacture. He is an accredited representative of the Russian Department of Agriculture, and will probably do much toward introducing modern apiculture in that vast empire where the most modern and the most ancient tools are used side by side.

Vcela Moravska is the name of a 40-page bee journal published in the Bohemian language, address not known. It is nicely printed, and is doubtless fully up to the times.



PLANTING FOR HONEY.

"Good morning. Is this Mr. Doolittle, the bee-keeper?"

"That is what some people call me."

"Well; I have been reading your conversations in GLEANINGS for some time back, so I came to see you (by letter) this morning. I have an idea, and I want to ask you about it."

"Ideas are good things to have; and if you have one that is of value, no doubt the readers of GLEANINGS will be glad to hear about it."

"But this idea was not for the benefit of somebody else. I wished your advice regarding it, that I myself might be benefited by your advice."

"Perhaps I shall not be able to advise you very much, but I will do the best I can. What is the idea?"

"My idea is that, if I can sow or plant something that will bloom about the time white clover fails, I can greatly increase my crop of honey, and the same be a good investment for me. Now, what I want to know is, what is likely to pay best for honey alone, or for honey and some crop of fruit or seeds."

"This question covers the ground of much discussion which has come about during the past; and I believe that the conclusion come to by nearly all practical bee-keepers is that it does not pay to plant really good land with any seed or plants for a crop of honey alone."

"That is discouraging. I had ten acres of excellent land, right close by my bees, and I had hoped that there was something I could plant for honey that would bring me better returns than the good crops I raise on it, of corn, potatoes, cabbage, etc. I have a notion to try the thing any way. I could stand it for a few years, even if I did not get big returns from it. If I do this, what would you advise putting on it?"

"If I were to think of planting for honey alone I can think of nothing better than melilot, or sweet clover; for in this locality this plant commences to bloom at about the time white clover begins to fail, and continues to bloom from then till frost comes in the fall, to a greater or less extent."

"But will not sweet clover furnish food for stock as well as honey for the bees?"

"Some say that stock can be taught to eat it, in which case it becomes a valuable forage-plant, and pays better than almost any other forage-plant, aside from its honey-producing qualities; but, so far as I know or can learn, no animal will touch it in this locality."

"What next would you advise me to try?"

"Alsike clover is one of the best plants for both honey and hay; and for quick returns there is probably nothing better, taking every thing into consideration, than is this clover."

"But that blooms at the same time the white clover does, does it not?"

"Yes, unless precaution is taken it will bloom at the same time the white clover does; hence it is of less value than it would be, so far as honey is concerned, could it begin to bloom at about the time white clover failed."

"You spoke about precaution being taken. What did you mean by that?"

"Alsike clover can be made to bloom very nearly when wanted, within reasonable limits, by turning stock on it, and letting them keep it eaten down short till about two weeks before you wish the bloom to commence, when it will give a good crop of blossoms and a fair crop of hay, though the hay crop will not be quite as large as it would if it could have had its own way."

"Is there nothing else that will help this matter out?"

"As you are somewhat young in years, if you have the patience to wait I would advise you to plant basswood. In the list of honey-producing trees and plants it stands first in bountiful yields; and in fine flavor, beautiful color, and quality of the honey produced, it is second to none, while the day is coming when any thing in the way of basswood lumber will sell at a price that will make it profitable to the one who can furnish any lumber of that name."

"Are you confident of this?"

"Yes, I am. Fifty years from now this grand tree will have practically ceased to exist in our forests, and be little known save as it is planted by enterprising persons, or exists in some of the gorges or out-of-the-way places so inaccessible that it will be considered too much trouble to procure it. Where there were fifty trees in this section in my boyhood days of forty-five years ago, there is hardly one now; and the few that are left are of the 'second growth;' or so crooked and scrubby as to be of little value for lumber. I have about 200 trees on my land, all the way from six to fifteen inches through at the butt, straight as an arrow, and from 50 to 75 feet tall, and no one would hire me to have them cut off, just for their prospect in lumber alone, while many of them resound with the merry hum of the bees at blooming time nearly every year."

"Did you plant these trees?"

"No. They were little poles which had come up from trees which had been cut down a few years before I came in possession of the land. I have been advised to clear the land several times during past years, but I said no; and now that they have got so nice a start, the same persons who advised clearing off, admit that this is the nicest wood lots, and of more value than almost any of the land round about."

"Have you any further advice?"

"To prolong the season so as to have honey in August, I would advise sowing buckwheat. The honey it produces is not of so great value as the white honeys, yet it comes at a time when it helps the bees in building up for winter, and brings a price in market that will pay for the labor expended; while the grain will amply pay for the whole raising of the crop, so that all that is secured by the bees and their keeper is clear gain."

"I must be going now, for I have hindered you long enough."

"Before you go I wish to call your attention to something we have not even hinted at, which I consider as of the greatest value in all of this planting-for-honey matter."

"What is that?"

"Have you any waste land lying about you that is growing up to weeds, burdocks, etc.?"

"Yes, plenty of such; especially about the fences."

"Well, did you never think that these waste places might be utilized? By planting something there which will produce much honey, this can be made to take the place of the weeds, briers, and daisies, so that the planting for honey may be beneficial, not only to the bee-keeper, but to all others, as something of value to some one takes the place of that which is of value to no one, and that which is often worse than no value; for the scattering of seeds from these waste places is often a nuisance to those who live where the winter's drifting snows may carry the seeds of noxious weeds far and wide. Right here is where I would advise you to commence operations first."

HEADS OF GRAIN DEPARTMENT FOR VETERANS AS WELL AS BEGINNERS.

A GOOD many of our subscribers have gotten the impression somehow that the department of questions and answers, or what we call Heads of Grain, is designed exclusively for beginners. If any one has that impression, I wish to disabuse his mind at once. An old veteran will often contribute a valuable fact from experience, that needs only one or two hundred words to tell it. Such items go in the department of Heads of Grain.* I should say that at least half of that department is intended for veterans. Technical matter does not necessarily have to be in the form of long-winded articles. Some of the most valuable and brightest ideas come from the veterans, written with a pencil, fingers bedaubed with propolis. These people have not the time to go into a long dissertation when only a few words are necessary to set forth the facts or ideas. If there is any know-it-all who is making a practice of skipping these shorter items, he is missing much.

THOSE BEES IN THE MACHINE-SHOP BASEMENT.

WE are just taking our bees out of the cellar this afternoon, March 26. They have been confined in the apartment all winter, and during the warmest part of the weather outside they are keeping comparatively quiet. But some one of our employees (no one knows who) went into the bee-room and turned on the electric light. The first I knew, it was on. It probably had been burning several days, glaring away at those bees. When I first went in I felt sure that at least a third of the colonies were dead, and the rest of the bees very much depleted. I shut off the light, and closed the door. I said to myself, "Those bees are done up, sure." Some employee doubtless blundered into the wrong room. Striking against an electric-light globe he turned it on. This, of course, drew the bees. The result was, he became frightened, left the room, and shut the door. Well, to-day I expected to find many of them gone up; but imagine my surprise to find them in remarkably fine condition—not a colony dead. But let me tell you there are more dead bees on the floor—yes, four or five times over—than there were about a week ago before the light had been turned on. At that time there were hardly enough to fill a two-quart measure out of 40 colonies. Many of these

*The article from Mr. McEvoy and the one from Mr. Greiner, both in the department of "Heads of Grain" in this issue, are cases in point.

colonies were nuclei, too weak to winter outdoors, and yet they all seem to be healthy. There are no dysentery markings on the hives worth mentioning, and the droppings are the voidings of healthy bees. A dry cellar and plenty of fresh air seemingly hold dysentery in check.

M'EVOY'S PLAN OF STOPPING THE OUTCOMING OF TWO OF MORE SWARMS AT ONE TIME, AND MIXING TOGETHER.

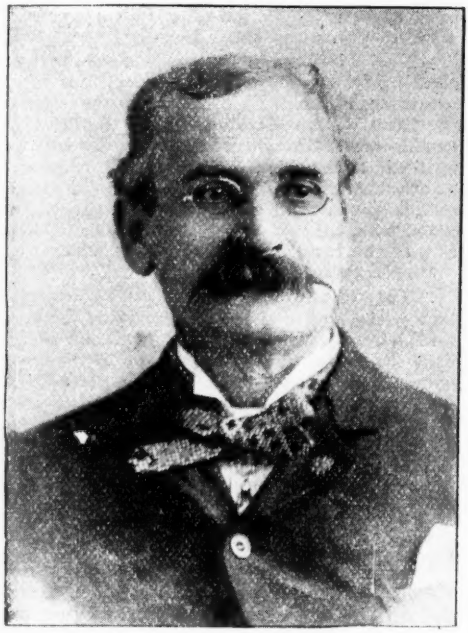
IN this issue, Mr. Wm. McEvoy, of foulbrood-inspector fame, tells of a very unique plan for preventing several swarms from mixing up, or, rather, preventing them from coming out entirely. His plan of covering the entrances tight with sheets or blankets of all such colonies as are casting or preparing to cast a swarm is one that I should have said would not accomplish the object sought, for the reason that the bees would boil out under the blankets through every available opening. But Mr. McEvoy is not a man to recommend a thing of this kind unless it would work; and, assuming that it does exactly what he says it does, he has offered a little kink to the trade that will be worth many dollars to many another person. It would then behoove the beekeeper to have half a dozen blankets handy. If he uses the whole six he could purloin some of his wife's sheets. Probably these last would require to be held down with bricks, stones, or other objects, so that they would not leave gap-holes for the bees to escape. I should be glad to hear from some of our subscribers as to whether they ever tried a plan like this. I intended to make this a footnote; but it got crowded out of its proper place, so I put it here to direct attention to Mr. McEvoy's article.

"FOUL BROOD SOON TO BE A THING OF THE PAST IN ONTARIO."

MR. MCEVOY says that "foul brood will soon be a thing of the past in Ontario." When we remember that at one time the province had more of this disease in it than any other equal area in North America, it reflects no little credit on the inspector, backed by a good law. He goes on further to state that Ontario sustains "more sound and very choice apiaries, for the number kept, than any other country in the world." I learn with some degree of surprise that an effort has been put on foot, in spite of this excellent showing, to get an inspector for each of the 43 counties or 344 townships. It is estimated this would make an expense of over $10,000. Surely the Canadian beekeepers will be content to let well enough alone by continuing Mr. McEvoy and Mr. Gemmill as inspectors. The plan of county inspection was tried in Michigan and New York, and abandoned; and the only State where it gives any degree of satisfaction is California, some of the counties of which are larger than some whole States. I believe I am within the truth when I say that the Ontario bee-keepers know enough to let well enough alone.

DEATH OF THOMAS G. NEWMAN.

WITHIN the last eight months time has taken away four of the old veterans—veterans of the veterans in the bee-keeping industry. First, July 16, came the death of the venerable Charles Dadant, one whose name was revered by bee keepers both in Europe and America. Next followed our genial Dr. A. B. Mason, on Nov. 12, one of the most enthusiastic workers and officers of the National Bee-keeepers' Association we ever had. Then on Jan. 13 our correspondent, J. H. Martin, went to the great beyond, the much-loved Rambler, who rambled all over the United States, and finally passed his last days in Cuba. Now we are compelled to record the death of another, the old Roman, "the old war horse," Thom-



THOMAS G. NEWMAN.

as G. Newman, who died in San Francisco, March 10, at the age of 69, of gastritis.

Mr. Newman was born near Bridgewater, England, in September, 1833. At the early age of ten he was left fatherless, the mother being left penniless by reason of the father indorsing for a large sum. Young Newman was put out at work, learning the trade of printer and book-binder. Next we hear of him in Rochester, N. Y., 1854, where he secured a permanent position in the job-room of the *American*. Several months later he was promoted to assistant foremanship of the Rochester *Democrat*. Again we find him as publisher and editor of a paper called the *Bible Expositor and Millennial Harbinger*. Once again he moves to Cedar Rapids, Iowa, where he published his first daily paper. This he subsequently sold,

and moved to Chicago, in 1872. Here he started an illustrated journal; but the panic of 1873 ruined him, bringing on a loss of $20,000.

About this time he was introduced to Rev. W. F. Clark, with the result that he came into possession of the *American Bee Journal*, paying for it $2000. As Dr. Miller has well said, "For a man not afflicted with the bee-fever, in cold blood to pay more than $2000 for the simple good will of a paper, with no printing-office, or supplies of any kind, shows an unbounded confidence in the future of bee-journalism. Few men, under the same circumstances, would have achieved his success." But with indomitable will and hard labor he brought the subscription-list up from 800 to over 5000, and the paper was a financial success. The affairs of the paper were considerably involved and mixed up when Mr. Newman took hold; but A. I. Root well remembers the prompt and energetic business way in which the new owner settled up all outstanding accounts. He employed as editors Rev. W. F. Clark, Mrs. E. S. Tupper, and Dr. C. C. Miller. His paper prospered to such an extent that in 1879 he went to Europe, at his own expense, to attend the various apicultural conventions in England, France, Austria, and Germany.

Mr. G. W. York, the present editor of the *American Bee Journal*, knew Mr. Newman better, perhaps, than any one else, and in his issue for March 19 he pays this glowing tribute to the memory of our departed friend:

> Probably the majority of our readers will best remember Thomas G. Newman as editor of the *American Bee Journal*. He was our honored predecessor, relinquishing all connection with this journal June 1, 1892. With the exception of about one year of the eight preceding that date, Mr. Newman was our employer, and he was a good one too. As we look back now upon those years, when we were getting hold of the ins and outs of both the bee-supply and publishing business, we wonder that he could have been so uniformly patient and courteous, when we must have been exceedingly trying many times. But he was ever the same, though often suffering with ailments, and burdened with businesss perplexities and cares.
>
> Mr. Newman published the *American Bee Journal* for about twenty years, taking it at a time when the bee business was practically "in the beginning." We believe the paper then had less than 800 subscribers. When he left it, it had 5000. He was a tireless toiler, and took great pride and interest in his work. He was fearless for the right, and did all he knew to do in order to make the *American Bee Journal* of the most value to its subscribers. It was no easy task for us to follow in his footsteps, as we were then wholly unknown to the bee-keeping world. But under his direction and training for years, we were daring enough to make the attempt, even though it was a risky thing for us to do.
>
> Mr. Newman's host of bee-keeping friends will look upon his picture and read these few memorial lines with sadness. They knew him well. He helped them fight their battles and win their victories. He may have made a few enemies—but who that stands for any thing worth standing for has not? But Mr. Nemman never held a grudge against a mortal man. He was ever kind and forgiving, and ever strove to live by the Golden Rule. In business he was an honest man; true to all; and leaves a rich moral heritage to all who knew him.
>
> Our readers, we know, will unite with us in extending to Mrs. Newman and family sincerest sympathy in this their time of bereavement.

While Mr. Newman did splendid work on the *American Bee Journal*, he performed extraordinary and valuable services for the bee-keeping industry while serving as General Manager of the National Bee-keepers' Union, of which he was the founder. The valuable precedents in law which were established under his generalship have been of incalculable benefit to the bee-keepers of the United States; and although the labors of the office were excessive at times, he worked without compensation, and it was only during the last two years or so of his incumbency in office that he accepted any salary.

During the last few years of Mr. Newman's life he struggled with almost total blindness at times, and all the time with poor health. He was by nature and habit an indefatigable worker, and when his affliction of eyesight came on it would seem that most men would give up. Not he. With the help of a reader and a stenographer he struggled on, "burning the candle at both ends" until the tired body and mind that had been crying out enough ceased to pull in the harness any longer.

THE LITTLE SWEET SINGER OF THE CHICAGO CONVENTION FULLY RECOVERED.

OUR readers will remember Miss Ethel Acklin, whose picture we gave in GLEANINGS some two years ago. She was the one who played and sang so delightfully at the Chicago convention, and again at the Buffalo meeting of the National Bee-keepers' Association. Last fall she underwent a severe operation, and her life was despaired of. At the recommendation of her physicians her parents finally took her to California, where, it was thought, a temporary change would tide her over the worst, and it did. We are glad to inform our readers that the danger is now past. Mr. Acklin has been at home in St. Paul for some time. Mrs. Acklin and Ethel will now join him very soon.

The impression seems to have gone out that the Acklins had gone to California to remain permanently. This is a mistake. Mr. Acklin has a flourishing business in St. Paul, where he is prepared to meet his friends and patrons as before.

THE DEATH OF ONE OF OUR CALIFORNIA CORRESPONDENTS.

MR. E. H. SCHAEFFLE, one of our old correspondents in California, died at his home in Murphys, Calaveras Co., March 7. Just prior to getting notice of his death I received a letter from him, stating that, although he was very weak, he was able to keep up his correspondence. He told how a friend admitted to him — a man who is supposed to know—that honey was adulterated in San Francisco in spite of the pure-food law. He explained that the law was good enough, but that those whose business it was to enforce it were somehow under the control of the mixers, and the nefarious business went on without let or hindrance.

Mr. Schaeffle had been working several years to get a pure-food law passed; and if he had lived long enough he would have made it hot for somebody in San Francisco, as there would have been some exposures.

He was a man who worked unflinchingly in the interest of bee-keepers in his section of the country. All through the last session of the State legislature, his son writes, he had been working strenuously for legislation that would aid in the suppression of honey adulteration, and for protection from foul brood, although he was so weak that all his work was done through dictation. He believed in pure honey as well as every thing else that was square. That his labors were not in vain is evidenced by the fact that the foul-brood law in California, which was defective in some particulars, was amended, and the bill was signed by the governor in January. California bee-keepers probably have now as good a law as they could ask for; and our friend Mr. Schaeffle, who has just passed away, deserves no small thanks.

A POSSIBLE SOLUTION OF THE PEAR-BLIGHT PROBLEM BY WHICH THE BEES AND THE PEAR-TREES CAN BE ALLOWED TO EXIST IN THE SAME VICINITY.

IT will be remembered by our readers that Dr. M. B. Waite, of the Department of Agriculture, Washington, a year or so ago discovered that bees, among other insects, carried the virus of pear-blight from one blossom or tree to another. This statement came from a strong friend of the bee, who has given it as his candied opinion that perfect fruitage in orchards could not take place without the little friends of the bee-keeper. But the stubborn fact was that *one* of the primal causes at least of the spread of pear-blight that has wrought such havoc in the orchards of California was the bee.

It will be remembered that the bee and fruit men were preparing for a conflict; that the latter averred that they would set out poison if the bee-men did not remove their bees from the vicinity of the pear-trees; and the National Bee-keepers' Union was appealed to, and as an officer of that Association the writer appeared on the field to see what sort of compromise could be effected. The result of this visit was that a truce was declared, and the bee-keepers, for experimental purposes, decided to remove their bees from the infected regions—at least during the time the trees were in bloom; but in spite of the fact that the majority of bee-keepers kept this agreement in good faith, there would be an occasional bee-keeper, even among the fruit-growers, who would still leave his bees in the old location. It was evident that, unless every one complied with the proposition, no benefit would accrue.

Well, matters have been going on from bad to worse. There have been talks of "courts," "poison," and a great amount of bad feeling has been engendered.

Now comes this Dr. Waite, according to the newspaper reports, and says that the pear-blight can be removed without interfering with the industry of bee-keeping. According to a newspaper report (a source which we do not always credit, but which seems in this case to bear the appearance of genuineness), Dr. Waite has discovered a plan by which "colonies of the bacilli" already existing in pear-blighted trees can be located and removed from the tree before it comes into bloom. Dr. Waite is quoted as saying, referring to the pear-growers, "Let them put the diseased part of the tree out of the way before insects begin to fly, and before the blossoms come out for them to alight on." Very simple. And now Dr. Waite is to be sent by his department to Colorado, to show the orchardists how to discover the "colonies of bacilli," and get them out of the way before bees and other insects have an opportunity to carry the infection. According to the same report, the "colonies of blight bacilli live in green bark where the blighted discolored portion blends off gradually into the normal bark." The doctor simply recommends a little common sense and some tree surgery.

One of the largest pear-growers in California told me that the pear-men themselves were largely responsible for the spreading of the disease. Granting that the bees were the chief agent in spreading the infection, he said that many of the growers allowed the diseased trees to exist on their premises without pruning. When they come into bloom the insects carried the infection from flower to flower and from tree to tree.

It is evident that *all* the fruit-growers will have to take unusual precaution to examine every twig in their orchards, and cut out the diseased portions. The *failure of one pear-grower* will put in jeopardy the interests of all the growers in his vicinity, to say nothing of the fearful damage among his own trees; and I would suggest that the kee-keepers themselves co-operate with the growers, and, if necessary, donate some of their own time in helping to prune the trees. A helpful spirit of co-operation will do more to solve this intricate problem, and place both industries on a paying basis, than any law, court, or poison could ever effect.

The large pear-growers in the vicinity of Hanford, Cal., so far as I could see, were progressive men. It was the small growers who talked venom and "poison," "courts" and "fight."

I omitted to mention that Dr. Waite says the pruning-knife or shears must be dipped in some disinfecting medium every time it cuts off a limb of a tree. It would be monstrous foolishness to scatter the blight from tree to tree in the very act of preventing such spread.

Of course, Dr. Waite's new plan may not prove to be entirely effective, from want of perfect co-operation and thoroughness. If they fail to take the means at hand, then the bee-men can hardly be held accountable before the courts.

PRIDGEN ON QUEEN-REARING.

Cell-buildiug.

BY W. A. PRIDGEN.

To prepare the bees for cell-building we will first consider the manipulation with the hive as shown in Fig. 2, last issue, page 231, with only three chambers, as it is less complicated; and, to simplify matters, we will imagine that each chamber is lettered, beginning at *a* at the left, and going to the right with *b* and *c* in order, each being stocked with a distinct populous colony of bees, *a* and *c* having entrances on one side and *b* on the other.

Remove the queen from *a*, and, two or three days later, these bees will be ready to complete cups that have been accepted by broodless and queenless bees confined, as has already been described, without depriving them of their brood, though any queen-cells found started on their combs at the time the accepted cups are given to them should be destroyed. When the queen is removed, a comb of brood and adhering bees may be taken with her to form a nucleus, and thus leave a space for the cell-frame, and separate those left to fill the space until the cups be given, or the queen alone may be taken, and a space made by removing a comb containing no brood when the cups are given, provided the combs left in the hive are so arranged as to place the cups in the center of the brood-nest.

The bees can remain in this condition until the cells are sealed, and then remove the division-board in the partition between *a* and *b*, and insert the bridge; or communication can be given between them when the batch of cups is inserted and have the cells completed as is the case over an excluder with a laying queen below. The point to be emphasized right here is the fact that this hive is conveniently arranged for having cells built by queenless bees, or those in touch with a laying queen, according to the wishes of the operator.

Communication should be given every time as soon as the cells are sealed, if it is not done before, so that the bees will act like those recently made queenless, in case it is necessary to cut off communication with the queen, to have the next batch of cups accepted and the cells sealed, though this is seldom necessary in either case, if the hive is kept crowded with bees; though when the first batch of ripe cells is removed, all the brood in chamber *a* will be sealed; and if the bees fail to accept the cups promptly, without their first being given to confined queenless bees, then simply cut off communication between *a* and *b* by removing the bridge and dropping a solid board into the slot, late in the evening, and the next day they will be found in a condition to accept cups promptly. If one is not in a hurry to have cells built, communication can be given when the queen is removed; and when all the brood is sealed, remove the queen-cells built on the combs, and then drop a solid board, or one provided with bee-escapes, into the slot, being sure to have the escapes so arranged as to conduct the bees from the queen's chamber to *a*, if the latter be used, and in this way one may have the first batch of cups accepted by these bees.

The same manipulations apply to chamber *c*, throughout, though they should not both be worked at the same time, but so managed as to remove a batch of ripe cells, first from one and then the other every five or six days.

As soon as the point is reached at which communication is given from the queen's chamber to one or both of the others all the time, a bee-escape should be adjusted to the entrance to the queen's chamber, so that the bees can pass in through it, but can not pass out until all passing is through the partitions and chambers *a*, *b*, and *c*, and then stop the entrance to the queen's chamber. Not only because more satisfactory work at cell-building is done in a chamber having the main entrance; but in case a swarm issues we want to throw the working force all into the cell-building chambers, and so depopulate the queen's chamber that the swarm-cells will be destroyed, and the queen will begin to lay at once, without its having to be opened. This is easily accomplished by simply adjusting the solid boards in the partitions, when the swarm issues, or as soon afterward as convenient, and again open the same entrance below the zinc excluder to the queen's chamber, which is far ahead of caging queens and cutting out cells to prevent swarming, as one never lays in a business-like manner so long as she is in touch with bees that have the swarming fever.

The swarm naturally returns to the entrances of the cell-building chambers, and are in condition to accept cups and continue the work to a state of perfection.

Under these conditions all sealed cells should be removed, and given to queenless bees or those over excluders to be cared for until ripe, and at the same time furnish the cell-builders, from which they are taken, a supply of freshly grafted cups. In five or six days communication can again be given from the cell-builders to the queen's chamber, and the bee-escape adjusted as before, only to repeat the operations as often as a swarm issues, which causes the apiarist but little annoyance unless the swarm unites with another that chances to be out, or is joined by a queen that is taking a flight. In this event, cut off commu-

nication between the different chambers as before, being sure to open the entrance to the middle one (the queen's chamber) on the opposite side, as in the first case. Adjust entrance-guards to all the entrances not stopped, being certain that none of those above the queen-excluders are open, and return the swarm joined by the strange queen, or the united swarm, as the case may be, to the cell-building chambers.

The queen with the swarm can, as a rule, be found trying to pass through the entrance-guards; but if from any cause she should pass any one of them she would then be excluded from the brood-chamber by the zinc in the bottom of the hive, the guards to be removed when no longer needed. These permanent excluders not only serve the purpose of preventing the escape of objectionable drones, which may be trapped from the entrances above them, but also prevent the entrance (and consequently the destruction) of the cells by virgin queens, or those with swarms that may be attracted by the cell-builders, which is sometimes the case when cells are being built by queenless bees, or even those in communication with a laying queen, if there be an entrance to the portion of the hive from which the queen is excluded.

Every time a batch of cups is given and accepted, combs of brood, mostly sealed, taken from other colonies in the apiary, should be substituted for those in the cell-builders' chambers from which the brood has emerged. These should be placed next to the cells or cups every time, and thoroughly examined as often as a batch is removed, for cells that may be constructed on them, all of which should be destroyed, as the hatching of a queen means the destruction of the cells in that chamber, and often an untold amount of trouble to find her. So long as cells are constructed on the combs of brood given, we have positive proof that the bees are in condition to do excellent work at cell-building, a thing they almost invariably do throughout the season in a hive properly constructed or arranged, if it be kept crowded with bees of all ages, and sufficient feeding be resorted to when the flowers do not yield sufficiently to meet the daily demand. But a better plan of keeping up the desired strength in the cell-building colonies is to have the brood all sealed above excluders in other hives, and examine them for cells when transferred with adhering bees to the cell-building colonies. By so doing the brood to be fed is never in proportion to the force of nurse-bees, which tends to bring about the supersedure impulse and the conditions wanted for the best results in cell-building.

These combs of brood are usually secured from nuclei, and placed over the excluders to be sealed, and those taken from the cell-builders, which are usually filled with honey or syrup, are given to the nuclei in exchange, and thereby bring about the conditions wanted in both. While, as a rule, it is better to allow the cells to remain where they are built, until they are ripe, and are ready to be distributed among the nuclei, or to have a nursery adjusted over them, as the case may be; still, when the cell-builders are inclined to build drone comb around and between them, as is often the case during a honey-flow, or when heavy feeding is resorted to, it is much better to remove them as soon as they are sealed, with adhering bees, to nuclei that have been queenless two or three days, or to less populous and prosperous colonies over excluders, as perfect queens seldom emerge from cells unless they possess the peanut appearance.

Continued.

COMB FOUNDATION.

Its Value and Use; the Weed Foundation the Best.

BY R. F. HOLTERMANN.

It has been my privilege, either under the Ontario, Quebec, or Canadian Dominion Government, as a farmer's-institute worker, to meet a good many bee-keepers, and also to visit a good many in their homes. Quite recently I returned from almost a month's trip of the above nature. Comb foundation has also been a study with me for many years, not alone practically in the apiary, but in its manufacture. So far as I know, the first experiments conducted in testing in the five various grades of comb foundation were planned by me. The Michigan Agricultural College, when they began experiments with foundations, courteously sent me samples of each grade to test, saying they sent it because I had already been carrying on some investigations. So strongly am I impressed with the value of comb foundation, that, after careful reflection, to do without it would probably mean for me to go out of bee-keeping. I certainly would have to go out of it as a business had my neighbors access to such a valuable asset for the bee-keeper; and yet I find bee-keepers all through the country who are trying to save (dare I call it this?) by economizing (?) in the use (or *not* use) of comb foundation.

It has long been admitted that foundation gives us straight combs; a starter will do next, and prevents drone comb if a full sheet is used. For this purpose it is worth many times its price. Let us remember that many generations hatch in a comb during the legitimate lifetime of a comb. Then the bees are saved material. The value of this we do not know. The bees are also saved work by the use of foundation.

In times of heavy flows the bees can not build comb as rapidly as the bees can gather. Here and in the doing-away with drone comb, lies, in my estimation, the greatest value of foundation. In a short honey-flow, running for comb honey, I believe it pays to use only a very narrow

starter in the brood-frames. It compels the bees to put the honey almost entirely in the sections; and when we go to the expense of running a colony for comb honey, the more they put in marketable shape the better. We can take combs out of extracted-honey hives run under more advantageous conditions for rapid storing, or we can otherwise afterward supply the comb-honey hive. But if the flow is prolonged, as it may be with us—clover, basswood, and then buckwheat—I would prefer the increased brood, which a good queen is likely to give through more rapid space being provided her for laying by the use of full sheets of foundation.

When it comes to the production of comb honey it is amazing to me how any one can be so foolish as to do without full sheets of foundation in the sections. That by using a proper grade of section foundation—that is, by taking a piece of virgin comb, and then comb built upon foundation, and testing it with the tongue, a difference may be found, means nothing. The tongue as a feeler has the trick of making a mountain out of a molehill. That a difference can be detected by careful inspection with the eye and spoon, is also of little consequence. Honey is almost invariably eaten with bread, when the extra wax, perfectly harmless in the alimentary canal, is unnoticed.

By the use of comb foundation we get evener comb. It is attached better to the side and bottom of the section, and room is more rapidly provided for storing. The bees are less likely to swarm, there being more of an inducement to go into the supers.

Now as to the comb foundation. I regret that, in the report of the Ontario Bee-keepers' Association convention, page 37, *American Bee Journal*, through some one's slip a decidedly wrong impression is given of what was said by me about the Weed foundation. I distinctly said that I had not found other section foundation more acceptable to the bees. In fact, so far the contrary is my experience, and I hope no one will use that incorrect statement as evidence of the superiority of other makes.

The Weed foundation has, for brood or sections, the advantage over any other I have so far used, of staying better where it is at the beginning; less sagging, or none at all. It is stronger; less weight per sheet in the brood will answer—a great saving. I fill the sections, the sides just hanging free; also the bottom; no starter needs to be used with this foundation, you can depend on it. The great objection I have to the ordinary foundation put upon the market is that it is not large enough to fill properly the section or frame for which it is made. By the close of this season the amount of brood foundation I expect to have used for the last year and this (this includes surplus combs) I expect will have reached close to 10,000 sheets; so I back up in practice what I advocate. I have 100 comb honey supers holding 36 sections each. Every section, last year and this, will have a full sheet of foundation.

Brantford, Canada.

BULK HONEY IN MEXICO.

Candied Honey Not Salable; Gasoline for Killing Wax-worms in place of Bisulphide of Carbon.

BY W. B. GEHRELS.

After reading Mr. Hyde's article on bulk comb honey, page 143, Feb. 15, I should like to give some of our experience in that line. The way we fasten foundation in shallow frames is by using a wax tube to run a little hot wax in the groove of the frame after the foundation is inserted; and for frames that have a comb-guide we simply use a roller foundation-fastener to fasten the starters on. After the first starters are put in we seldom use foundation again; but when cutting out the honey we leave half an inch of comb for a starter, the bees seem to work faster on this than on foundation, and get the combs just as straight. Where the frames are filled several times in a season this will be quite an item in saving foundation, besides saving time. At the end of the season we cut out the comb honey, leaving only half as much for a starter, stack them up, and let the bees clean out the honey.

If wax-worms should get in the strip of comb left, use bisulphide of carbon to kill the worms. A neighbor told me that gasoline would kill wax-worms by using it the same way as bisulphide of carbon—namely, by closing a stack of supers tight and letting a quantity evaporate by setting it in the supers in an open vessel. Both bisulphide of carbon and gasoline should be handled carefully on account of their inflammability.

My experience is not the same as Mr. Hyde's in selling candied honey. I have sold large quantities of honey in Texas, mostly in San Antonio, and the greater part of my customers always objected to candied honey, either comb or extracted. Nothing has caused me more trouble than people objecting to honey after it was candied. It certainly spoils the looks of honey, especially when it is in glass. Most people never stop to think that this gray-looking stuff is honey in the jars. For the winter trade, give me section honey, and good extracted that I can liquefy. I like to have some of each kind—sections, chunk honey, and extracted; for in this way I can suit almost anybody who likes honey, at almost any time.

In selling honey to groceries, especially wholesale stores that buy to resell in bulk and ship, I often found the need of a small cheap jar or tumbler that would seal tight, and could be retailed for 10 cents apiece after being filled. The ordinary ⅓-pint jelly-tumbler answers the purpose for the home city trade; but there is no way of sealing it tight enough to ship with safety. The empty jars ought not to cost over 3 cents apiece, and ought to be in cases holding 2 dozen in a case. If any one has a jar of this size, ⅓ pint, and description, he could find a ready market for it.

We expect a fine honey-flow from orange and lemon very soon. The bees are already working on them to some extent. The buds are not open, but they secrete some honey from the stems of the buds and tender young leaves.

Montemorelos, Mexico, Feb. 26.

THE NEW NOMENCLATURE.

A Plea for the Term "Forced Swarms," to Cover "Jounced," "Shaken," and "Brushed" Swarms.

BY R. C. AIKIN.

Friend Root:—I have previously written on the subject of proper names for swarms other than natural ones; but your remarks on page 47 stir me again. The term *driven* has already a special meaning in apicultural affairs that does not apply to any form of shaking or brushing; but the term *swarm* does apply to a congregation of bees whether accumulated by instinct or forced and unnatural methods. In that item you say "shaken, shook, brushed, jounced, or forced." Don't you see that your last name covers all the others? If you had left out the term "forced" and put the "or" before "jounced," you would have said all that you did say. The various terms you used are but qualifying ones showing by what method the forced swarm was made, so that to use any one of them is not proper; but it would be proper to say, "made forced swarms by brushing, driving, etc." It seems to me so plain a matter that there should be no quibbling about it whatever, at least along the lines so far considered.

I should not consider the name "artificial" at all the one, for it does not fully cover, because of its use. Artificial is not real, such as a wooden horse, cow, or other thing—wax flowers, etc., but we do make a swarm of bees a real swarm, and not a wooden or wax one. It would be more proper to say artificial swarming than to say an artificial swarm, for we are describing the art of making swarms as compared with the natural or instinct plan; but, the division made, we have a swarm of bees just as we have swarms of flies or any other insect or any thing else that congregates in great numbers. Even should you scatter the bees until they cease to be a swarm they again congregate and become a swarm or aggregation.

Many times I have thought to speak of other uses of words that are superfluous and amusing, but have refrained, partly because I am not a grammarian, yet the blunders are so very plain that any one should observe them. Look at these: The house burned up; the dog chewed up; he gathered up his apple crop (or any other crop); I swept up (together) the bees, swept out the house, cleaned off the porch, cleaned out the stable, washed off my face, or hands, brushed down the walls, etc. I once heard a schoolgirl criticise her mother for some trivial mistake in the use of language; and to call her attention to the fact that she herself was not perfect I said, "Minnie, do you ever sweep the house out?" She blushed, and looked at the floor, then stammered, "Yes, sometimes."

I replied, "You mean you sweep the dirt out," which at once turned the laugh. In almost every case the words *out*, *off*, *up*, and *down* are superfluous. The house in reality burned down; but even that is not proper; it simply burned, or was consumed. The poor man having his face and hands washed off is surely in a bad fix.

Now, friend Root, I would not have written this but for the fact that that swarm question is up for settlement; and the term that will be adopted depends mainly upon what you and other editors and writers use, especially editors; and it behooves you to start right and insist on the proper name until it is fixed. I am glad to see that many are using the name I advocate, and many say "shook or forced," you see, naturally gravitating to *forced* because it seems to cover or convey the thought better.

Loveland, Col. R. C. AIKIN.

[I think it is pretty well agreed among us that "forced swarms" is the term to use, covering a variety of manipulations, and so far I have endeavored to substitute this term when it is used in a *general way;* but it is perfectly proper to use "jounced," "brushed," or "shaken" to indicate the specific mode of handling such swarms, and I do not see but we shall have to allow the use of them when the precise means of handling is to be pointed out. "Driven swarm" may be proper enough for a general term, and personally I should not object to it; but the word "forced" has come to be a part of our nomenclature.

If you attempt to criticise the common uses of the language which are recognized as proper wherever the English language is spoken, you will get into deep water. The use of the adverbs in connection with the verbs cited may, perhaps, be superfluous, but they have come to be a part of the language, and accepted by all the best scholars. We could not change them, even if we would.

I would defend Minnie by saying she was perfectly proper in saying she could "sweep the house out," on the ground that usage recognizes the legitimacy of the term. If you attempt to throw out the superfluous adverbs all through the language you will have a bigger job on your hands than to try to reform our spelling. But it behooves us, nevertheless those of us who are coining words, to make them as accurate as possible to start with, so that foreigners learning our language will not be confused as was the Frenchman when his head was sticking out of the car window, and he was told to "look out." He protested that he was looking out, notwithstanding a telegraph-pole was liable to take off his head. But our language is not the only one that is incongruous in some of its phraseology. —ED.]

A CONVENIENT DEVICE FOR FILLING HONEY-BOTTLES.

Whenever I had occasion to fill small receptacles, such as tumblers, jars, fruit-cans, etc., from a square 60-lb. tin can, I always found it a most unpleasant and difficult task. The general make-up of the can, its straight, smooth sides with no handles or

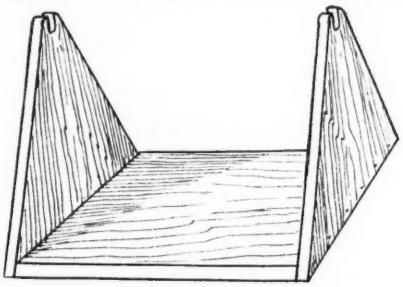


FIG. 1.

projections of any kind, together with its comparatively heavy weight when full, required a somewhat trick-like manipulation to succeed without having more or less honey running down on the outside of the large can or the one to be filled. A simple little device which I have constructed and used lately changes this heretofore annoying work to a pleasant pastime.

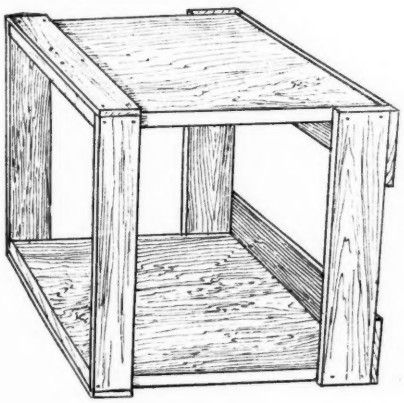


FIG. 2.

The accompanying illustrations give each part separate and all in combination. Fig. 1, frame or standard; Fig. 2, basket; Fig. 3, the whole in operation.

The basket revolves or swings on a pair of ¼-in. rivets, and with the can when full nearly balances, so that a very light pressure with the left hand is sufficient to tip it forward until the desired stream of honey is running. When the small can is full, a slight backward move of the can will stop the flow; and with a turning motion of the right hand, the edge of the small can scraping the lower edge of the outlet, all the dripping honey is cleaned up and the job done in a neat and workmanlike manner.

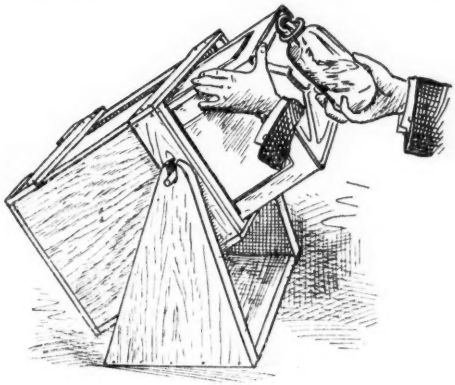


FIG. 3.

It will be noticed in Fig. 3 that the outlet is on the upper side of the can. To run a clear stream and prevent the honey from running down the can, a portion of the contents, perhaps two gallons, should be drawn in this way. After that the basket may be tipped in the opposite direction, and the rest drawn. When nearly empty, the can should be taken from the basket; and by holding it cornerwise almost every drop can be made to run out.

La Salle, N. Y. G. C. GREINER.

[This device is very ingenious as well as simple; and for filling from the square can, nothing could be handier.—ED.]

SPIDERS; SOMETHING ABOUT SCORPIONS, FROM PROF. COOK.

Mr. Root:—The "scorpio spiders" sent you by a customer in South Africa, and which he said he saw hanging by the nippers of the forearm to the bee's legs, were very well named by your correspondent. They belong to the great spider order, *Arachnida*, and to the scorpion group which have been known by the name *Pedi palpi*, because the palpi, which are really mouth organs, are long, and look as though they might be feet, though they are the fifth pair of long organs, and none of the spider group have more than eight legs. Your correspondent probably mistook these for legs, as he spoke of them as holding on by their forearms. This group has also been known as *Arthro-gastra* because their abdomen is ringed or segmented unlike all the others of the spider group. As all know, the mites and true spiders have no segments to the abdomen. These segmented forms include the true scorpion, very common here in California; the whip scorpion, with long

caudle appendages; the *Datames*, which I illustrate in my bee-book, and which sometimes are known to kill bees; the harvestmen, or daddy-longlegs, as they are sometimes called; and, lastly, those sent by your correspondent, which are known as book scorpions, as some of them are often found around book-cases. Those we have here are rather smaller than the one sent from South Africa, and I suppose they, like all of the spider group, live on other insects. The genus of ours and those found in Michigan and Ohio are *Chelifer*. From their size we should hardly expect they would do much harm in the hive, although they might annoy the bees, which it seems they did do, as the bees were trying to get rid of them. Ours are sometimes called *pseudo* scorpions, which word means, of course, *false* scorpion. Their most characteristic feature is their immense "palpi," which end in immense pincers, or, as they are often called, *chelicera*. They thus remind us of the crayfish or lobster, though in the latter case these great pincer-tipped feet are really legs. I am curious to know whether these are really in the bee-hives, and whether they do work any considerable mischief to the bees. If they do, this is the second species of this scorpion group that works harm to the apiarist. The datames, or galiodies, are not uncommon in California, and do really destroy bees, although they are not numerous enough to be of any serious consequence. A. J. COOK.

Claremont, Cal.

AN UNPUBLISHED CHAPTER IN THE LIFE OF THE RAMBLER.

Ever since I read of the death of our friend Martin I have been sad; and no one in this country who was ever acquainted with him or his noble writing and work, can feel otherwise. So I thought it would give me relief to write you and give you some of his writings over six years ago, when I had to pass through the same trials that our friend did, when I had to give up the best friend on earth, whose death was published in GLEANINGS. Yes, I am sure that cloud of sorrow never left him in this life; and while on the mountains or on the lonely plains I believe the tear of sorrow for his loved one often stole down his cheek. He wrote me, Dec. 13, 1896, saying:

> You may be sure that you have my heartfelt sympathies, for I have been through the deep waters as well as yourself; and when I saw the name Celesta, the teardrops moistened my eyes, for that was a portion of my wife's name—Libbie Celesta Martin. For 13 years we passed a very happy married life. One child came to us that died at birth. At the close of the 13 years my wife was taken away after only ten days' sickness, and left me stunned with grief. I lived with my aged parents, and cared for them, but in two years to the month after my wife died my parents both died. Soon after, I sold out, and ever since I have been a homeless wanderer (rambler). I know you will sadly miss your beloved wife, and will miss her more now than you did at first. I know how sad, too, your home-coming will be after you have been for a day away—no dear loving face and smiles, and a kiss to greet you. Yet we should feel that death is only a change to a better and a higher life. With that assurance, could we call our loved ones back again to the trials of this cold world? No, we could not. Hoping you the consolation that only the dear Savior can give, I remain truly yours, J. H. MARTIN.

You don't know how much comfort this kind letter gave me in hours of trouble; and while he had his sad hours he trusted in one who would carry him through life with that unshaken faith in Jesus to the dear one he longed so much to see. While he has gone from earth's work he has sown seed that will germinate and grow from sea to sea; and while we mourn his loss, may we be bettered by his noble life, for the Bible tells us by the sadness of the countenance the heart is made better; but that which I have seen for 13 long years will appear no more. ABBOTT CLEMANS.

Benson, W. Va., Feb. 8.

DON'T LET YOUR SWARMS GET INTO A MIX-UP; A VALUABLE KINK.

Last season was the worst one ever known in Ontario for many swarms rushing out of their hives at the same time, and all clustering in one great cluster; and where this takes place it uses up much of the bee-keeper's time in putting things to rights, and delays all his other work, which needs very prompt attention, and at the end of the season he will be many dollars short in his honey crop. Last summer I saw the swarms coming out of eleven of my colonies at the same time. I called my help, and we very promptly covered ten of these with quilts and sheets, and let the one that had most bees out go on and alight, which it did; and before they had half clustered, four more colonies started swarming, and these we promptly stopped by covering them with quilts which went down to the ground, and hung out about a foot from the hives; and under these quilts the bees rushed out of the hives pellmell for a few minutes, and then returned back into into their hives. As I keep all of my queens' wings clipped, and finding the swarm up the tree not returning, I knew it must have a young queen with it, and at once hived that swarm. I then took the quilts off the 14 colonies as quick as I could, so as to let in the field bees that were coming home hunting for their hives. I then went to work, and divided the bees and made a swarm from each of these 14 colonies, which I prevented from swarming, and secured a good yield of honey. I hit on this method over 25 years ago, and have practiced it ever since; and it has been worth many dollars to me.

WM. MCEVOY.

Woodburn, Ont., Canada, Mar. 18.

DO SEEDLING PEAR-TREES EVER BLIGHT?

Do seedling pear-trees ever blight? I have seen two that got to be very large (30 feet or more high, and 40 or 50 years old), and they did not blight, to my knowledge. One of my neighbors has three seedlings ten years old that have borne pears four years, and not blighted yet. But you all say we do not want seedlings.

Again, will pears grafted or budded on seedling pears blight? A nurseryman told me that they will not; and if not, why not so bud or graft them, and let the pear-men and bee-men live together in harmony by this plan of propagating pear-trees? I have two seedling pears that I expect to experiment on, and have quite a lot of seeds ready for spring planting.

The great Lincoln pear-tree (seedling) at Lincoln, Ills., never blights; but trees raised from buds and grafts from it do blight. M. W. MURPHEY.

Cuba, Ills.

QUESTIONS AND ANSWERS IN GLEANINGS; FENCES FOR THE BUILDING-OUT OF BROOD-COMBS A SUCCESS; A KINK IN INTRODUCING.

After reading your "General Subject-matter of a Bee Journal," and your suggestion as to suggestions and criticisms from your readers, I went back to the beginning of the issue, and read it all through carefully, and am now convinced that February 15th issue can not be improved upon. I wonder if any of your readers are "smart" enough to better it in any particular. I sincerely hope that the editor will have the compliment paid him that he so richly deserves—that of unanimous approval of the editorial management of GLEANINGS If it is in order to suggest one thing that would enlarge its scope of usefulness I believe that a "new-idea department" would be a good thing. What I mean to say is, that there are a great many good ideas known to individual bee-keepers—little discoveries that each one has made, or that some have made—that would be very valuable to others if generally known, and that a department in GLEANINGS soliciting such ideas would bring out many little helpful things that are not now thought worthy of "handing around."

For instance, I have at times tried separating brood-frames with the slatted section fence in order to compel the bees to build the combs straight, and it works like a charm. I take out the fence when the combs have been well drawn out. I wish I had fence of brood-frame depth in sufficient quantity to have all future brood-comb built by.

I remember that, some months ago, some bee-keeper wrote of a good plan to introduce queens that he had tried, which was to give the queen (as an "escort") a number of bees (too young to harm her) from the hive to which she is to be introduced, thus compelling her to take the scent of her future home before being introduced to it. I think that was an extremely bright idea, saving much time and many valuable queens. I am always as hungry as the proverbial bear for any thing that is better or quicker or easier or cheaper, and I verily believe that there are many valuable little "tricks" known to individuals that might be brought out by some means and do untold good.

Pass around the little helpful things that you know, and that cost you little or nothing, and see how much better you will feel when you know that you have made the burden lighter for your brother.

Statesville, N. C. JNO. M. GIBBS.

[It is perfectly feasible to use fences in the building-out of brood-frames; but the novice will be quite liable, if he uses only starters of foundation, to get drone comb. If there were a sufficient demand we would be glad to have special fences made for the purpose.

A "new-idea department" in GLEANINGS would be a good thing; but you know the old saw, "There is nothing new under the sun." While it is indeed true that some of the old things are new to others, yet if we should put a method or plan that you deem to be new into the new-idea department, some old veteran might say that it was "older than the hills." It would be better to put these new ideas into the general column of Heads of Grain, where they may prove to be new to some one, and then no old crank can complain because some one else has appropriated his ideas, or invented some new old thing.—ED.]

NEW OR OLD COMBS, AND THEIR RELATION TO WINTER LOSSES.

I wonder if many of us ever stopped to think why it is that, in wintering outdoors, some colonies will come through strong, others be much weakened, and some die outright, when there had been no apparent difference in bees, stores, or protection. After the blizzard had left us, Feb. 23, I examined my 55 colonies that were left on their summer stands, and found, as I had feared, that the losses were very heavy.

The fact that struck me most forcibly was that the bees in one row of hives containing twelve strong colonies were all dead but two, while other rows had not lost more than one each. These colonies in the ill-fated row were all bees that were transferred from box hives two years ago. As the combs were a fairly good lot, when I transferred them I followed the usual method, getting from three to five good straight combs, and filling out the remainder of the hive with sheets of foundation. As I run for extracted honey I use ten-frame Langstroth hives, leaving the brood-chamber in the fall without removing any honey or combs, so that my bees usually have plenty of stores.

When I found so many dead colonies in one row I began to try to find some reason for such a queer result. I first took all the hive-bodies with dead bees into the honey-house, and began to examine the combs and bees. There were 14 dead colonies in all. Three of them had been weak, and one had starved, the combs being empty. The others, including eight of the unhappy ten, were strong in (dead) bees, had plenty of honey, and had each a few cells of brood. But the honey was in every case on one side of the hive, and the cluster of bees on the

other; or the cluster was in the center with honey on each side.

Then I began to wonder why the bees should ever cluster on the three or four outside combs when the honey was out of their reach. It could not have been the warm side of the hive, for some of the clusters had been on the east and some on the west side of the hive. But I soon saw that they had invariably clustered on the old transferred combs, no matter where they were, if they were all massed together; and I did not find a single dead colony in which the old combs had been scattered through the hive. The bees had simply preferred to cluster on the old combs, and seemed to consider the honey as of secondary importance.

Now, it seems to me that this could not have been simply chance. I am certain that there are few or none of the living colonies having part old combs and part new; while those that died during this cold spell were almost invariably in that condition. I do not mean to say that this explains all winter losses, by any means. But I think it would be well for us to give the colonies combs of the same age, or when transferring, as in this case, to scatter the old combs through the hive. C. F. BENDER.

Newman, Ills.

[We winter every year outdoors at least a large part of our bees; and while bees seem to prefer the old combs, I could never see but they wintered as well on one set as the other. Some seven or eight years ago, when we had foul brood so badly among our bees, we had to shake a good many affected colonies on to foundation. There were some 75 such colonies (or, rather, nuclei) that had all new combs to winter on, and it was that year when we wintered *without the loss of one colony*. The new-comb nuclei, for that was what they were, apparently wintered as well as those that were on old combs, and were stronger.—ED.]

A COLONY IN THE GARRET, THAT HAS NEVER SWARMED.

In 1863 a party of soldiers plundered and destroyed the apiary of Simp. Bain, at Meltonsville, eight miles from this place. They split open the gums and took all the honey. Mr. Bain got the remnants of several colonies out of the wreck into a large box, and put them in the garret "to save seed." That hive of bees is there yet. They have been "robbed" every year since by cutting out the surplus honey, and have never been known to swarm. These 40-year-old combs still produce vigorous bees, and I suppose Dr. Miller can have his bees with "no desire to swarm" if he will put them in like condition.

THE SHAKEN SWARMS BEAT ALL THE REST.

I began "shaking" swarms several years ago to keep my valuable queens from running off, and to Italianize. The shaken swarms beat all the rest, and at first gave the superior stock more credit than was due. I give one frame of brood, and have never had any to swarm out.

To get rid of a fertile worker I give a frame of brood and eggs, and exchange places with a strong colony while the bees are flying. They raise a *good* queen for me every time. I suppose they destroy the fertile worker at once.

WHICH QUEEN IS KILLED?

If I run a swarm into an old colony that has a queen, which queen is *usually* killed? I have twice had clipped queens with a portion of the swarm enter a near hive, and on opening the hive I found the reigning queen balled, and the intruder in peaceable possession. B. COMAN.

Guntersville, Ala., Feb. 26.

[It is a well-known fact that a large colony of bees in a garret will rarely if ever swarm. This matter is mentioned in our A B C of Bee Culture. I have often wondered, though, why bee-keepers have not taken advantage of having large colonies in extraordinarily large hives. Here, for example, is a professional or business man who is away from home all day. Suppose he had some extra large hives on the garret principle, full of bees, storing honey year after year, and never requiring so much as a moment's attention. It may be the time will come when we shall cater more to the needs of the professional and business man who would like, say, half a dozen hives at his suburban residence, from which he may take at his convenience some of the most delicious sweet in the world.

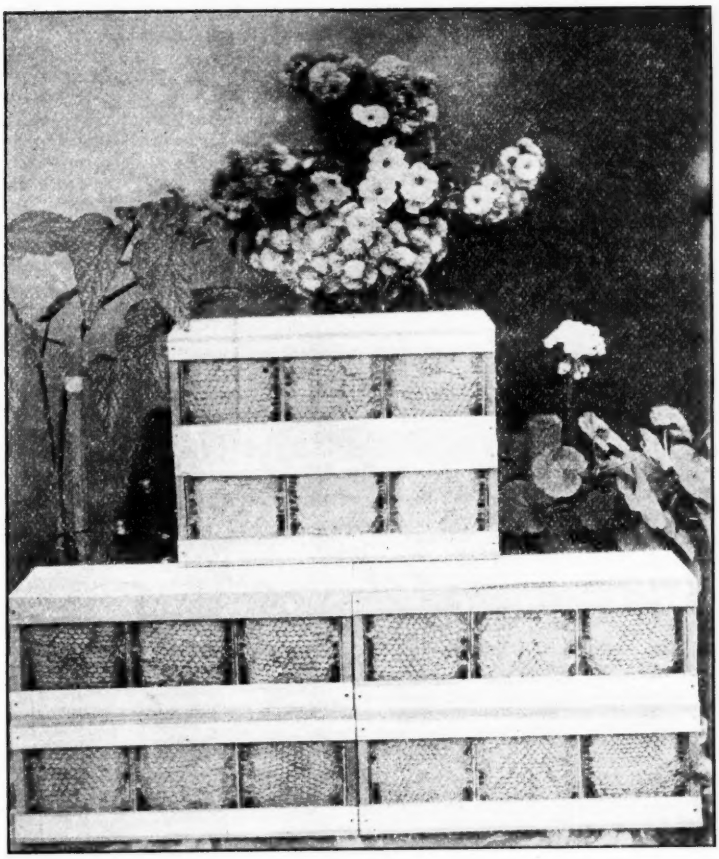
Your method of getting rid of fertile workers is a very good one. I have tried it myself with uniformly good results.

I do not know which queen, referring to your last question, is usually killed; but I do know that sometimes our very best breeders have been supplanted by a worthless inferior virgin which, through mistake, got into the hive instead of her own. I do not believe we can lay down any rule. If one or two bees should happen to attack the intruder, the old queen-mother would be left untouched; but if she should happen to be favorably received it might be a question of the survival of the fittest—a war between a young, vigorous, strong-legged queen, and one which, perhaps, has done a year of service, and may be somewhat weak in the legs. In the scrimmage the bees will probably take a hand and destroy the weaker of the two.—ED.]

THE APIARY AND THE PRODUCT OF A BEE-KEEPER 65 YEARS OLD.

I herewith send you two pictures, one of my apiary, and one of honey cased for market, as taken by myself, an old man of 65 years. They are not the best, as I have not had many months' experience with the camera. The apiary was taken last spring as the trees were leafing out. The hives you see were all from your company.

Wahoo, Neb. JEROME BARNELL.



MOVING TO A BETTER LOCATION.

Would it pay one who is just beginning in bee-keeping in a poor place for bees to move to a locality where basswood, whitewood, and sourwood abound? Don't you think the above-named trees, in addition to persimmon, red-bud, locust, etc., would be a very desirable place? I know of such a place ten miles from me.

J. H. PRILLAMAN.

Simpsons, Va., Feb. 18.

[If you can easily move to a better locality, we would advise you to make the change. Dr. Miller has said that he would not recommend any one to go into bee-keeping very largely, and depend on white clover as his main and almost only supply of nectar. Some seasons basswood will yield heavily while clover will be almost a failure, and again the reverse may be true.

If you have a good business aside from bee-keeping in the locality where you reside, I would not advise you to give it up for bees by going into another locality that may be more favorable. The bee business is rather uncertain as a means of livelihood; and the average person had better have something else to tie to.—ED.]

THE SUBJECT-MATTER OF GLEANINGS; A GOOD WORD FOR DOOLITTLE'S ARTICLES.

I am glad you are going to let your readers tell you what they like in GLEANINGS; I read a bee paper or book for what I can get out of it of *practical* use. Of course, I can devote only part of my time to bees. The world has too much of interest and business for me to devote much time on sentiment or pleasure. I can not spend time to read long articles for what little practicle use I get out of them. Along this line I enjoy Mr. Doolittle's talks best of all. He, every time, clears up a point of interest to me. Next I like the questions and answers. They are in the same line. And I have received enough of value in the discussions of forced swarms to pay me for five years' subscription to GLEANINGS.

M. G. T. JOHNSON.

Binghamton, N. Y., Feb. 5.

FEEDING OUTDOORS NEAR THE APIARY; IS IT PRACTICABLE?

Can I, just before wintering colonies, place sugar syrup or honey in an adjoining garden, about 120 yards away, separated from my apiary by a belt of maples 25 feet high? Would this unsettle the apiary and incite robbing, or can I place food in the apiary itself? All feeders seem to induce robbing. I intend having buckwheat in another garden, and thought to place feed-stands there. I don't sell sugar stuff, but use it only in brood-work, and have all frames marked so as to distinguish. R. MUCKLE.

Clandelborge, Manitoba, Feb. 25.

[It is usually not practicable to feed any syrup of good quality outdoors in open feeders. If syrup of granulated sugar is fed at all it should be almost as thin as water. Years ago we used to feed water sweetened with lumps of grape sugar, without inducing robbing; but let me tell you if you feed the ordinary syrup, two parts of sugar to one of water, you will have trouble. You might be able to feed such syrup if you inclosed the feeder in a box, and allowed an opening so that only one bee could get through at a time. But I would hardly advise this. It makes a disturbance, even worse than feeding inside of the hive. If you feed in Boardman, Miller, or Doolittle feeders, at night, giving the bees most of the syrup before morning, it will cause very little disturbance next day. Feeding always stimulates, and has a tendency to cause the field bees to hunt around, nosing into every thing to see where that big supply came from; and woe betide the nucleus with too large an entrance.—ED.]

KILLING OFF WEAK COLONIES INSTEAD OF WINTERING.

I am a new bee-keeper — that is, I have five swarms. Last fall one of my neighbors who keeps bees advised me to kill my weak colonies that would not winter. I did so, and have four hives with brood-frames partly filled with honey, and partly with pollen, or some such stuff. Part of the honey is very dark. Would it do to put new swarms in the same hives? If not, what can I do with it? In last GLEANINGS I see advised the saving of old comb.

JOHN WALSH.

Stanstead Plains, Quebec, Can.

[Your neighbor gave you bad advice. Where there are only a few nuclei they can usually be wintered quite well in a good cellar, providing they have sufficient stores and the cellar be kept dark. We have wintered many nuclei that way, and consider it is throwing away property needlessly to kill off the bees of such.

Yes, you can use the combs next spring, even if the honey is dark.—ED.]

WHEN TO GIVE FULL SHEETS OF FOUNDATION.

Last fall I took all of the drone combs away from my bees, and now I wish to put whole sheets of foundation in, and do not know when is the best time to do it next spring. Had I better put it where the drone comb was taken out, or put them in the center of the brood-nest. Some of them had one whole comb; some had two combs.

R. H. ELLSWORTH.

Homets Ferry, Pa., Mar. 2.

[I would not give the bees any foundation until they are crowded for room. If you desire to spread the brood for the purpose of increasing the strength of the colony, insert now and then a full sheet of foundation between the frames of brood; but be careful not to carry this too far in cool weather.—ED.]

CUBAN APIARIES AND THE MEN WHO RUN THEM.

Resuming my story on page 251 of last issue, it is not only turkeys, chickens, ducks, etc., that friend Hochstein has around his home, but they have some of the prettiest white doves in boxes up under the eaves of the house I ever saw. A pair of young doves, almost large enough to try their wings, were there, and they were looking out of their domicil very curiously at the (to them) new world. Some of the folks, just for fun, lifted out one of them and put it on the doorstep outside. The "papa" dove was off hunting food for his youngsters. When he came back and found one of them had gone outside, as he supposed, without parental permission he was "mad as could be," boxed their ears (figuratively speaking), and gave them a good sound scolding, and then pushed them back inside, and just laid down the law, commanding them never to think of even putting a head outside until *he*, with his mature wisdom, decided they were old enough to go outside and look out for themselves. There are lots of interesting things around that Hochstein home at the foot of the mountain. A beautiful spring bursts forth from the rocks just above, and friend Hochstein is planning to use it for irrigation.

It was very windy at the time of my visit; notwithstanding, the bees were just pouring in with loads of sweetness. I think I never saw so many bees coming in with loads in all my life before. When the wind would let up a little they came in from one particular direction through the canyon, down the mountain-side, until the air was almost black with them. And, by the way, boisterous wind, or something else, made the bees remarkably "ugly" that day. I do not know but they blamed *us* for the fact that the wind hindered them in their work —a great deal like complaining human beings, aren't they? Well, I saw by the looks of things that friend Hochstein was getting a tremendous crop of honey from the nearly 500 hives, all in one spot, most of them two-story, and many of them three.

"Friend Hochstein, how much honey have you taken already this season from this apiary?"

"I am not going to tell you, Mr. Root."

"Well, I should like to know *why* you are not going to tell me," said I laughingly.

"Well," replied he, "Rambler asked me that same question last year, and I told him just as I have told you; but, notwithstanding, it got out, and now there is quite an apiary started over here in the south, another on the west, another on the east, and now I am expecting every day somebody will locate just above me on the side of the mountain. Every time they see me take a carload of honey over to the station, they say to themselves, 'Why, that fellow is making money hand over hand,' and then go right straight and start another apiary. I am going to take my honey to the station after dark after this, and I will not tell a soul how much I am getting. I was thinking of starting some out-apiaries myself after a while; but just look at it."

Now, I presume the above is not friend Hochstein's exact words, but something to that effect; and I, for one, protest against this fashion of dropping down with a lot of hives close to a successful bee-keeper. In drilling for oil it may be all right; but where there are miles and miles of good territory for honey unoccupied, what sense or courtesy is there in crowding up toward somebody who is already doing fairly well?

With the tremendous job it is to get honey and supplies to and from the station, one would suppose friend Hochstein would have comparatively full swing, and I think he went away out there just on purpose to be free from bee-keeping neighbors.

Friend H. has several convenient inventions in and about his apiary. One is that he has a door to his honey-house so it opens automatically when you come up to it with a wheelbarrow full of combs of honey. The moment the weight of the barrow gets on a plank that leads up to the door, the door swings open. Then the man who is operating the extractor, by pulling a cord over his head, shuts it up. This arrangement alone saves lots of time and hard work in opening and shutting doors. His son, also, has invented an arrangement to clasp the lower end of the frame while slicing off the cappings. We expect to get illustrations of this later. He also uses very successfully a solar wax-extractor just like the one we have at Paso Real; but in order to have it turn easily so as to face the sun, he has it on a platform that turns on a bolt. I believe somebody suggested, some years ago, taking an old wagon-wheel and fixing it on a post for an axle so it would turn easily, then attach your extractor to this wheel. This makes the whole apparatus swing so easily that you can turn it by just a touch of a finger. Well, friend Hochstein found it was a bother to lift out the square tins whenever they got full of wax; so he has an opening with a piece of gaspipe attached to it that lets the wax run into a suitable receptacle down below the bottom of the solar extractor.

Last, but not least, the broom he uses to brush off the bees is made on a 40-penny spike, the head being inside of the handle of the brush, the sharp end of the spike protruding from the end of the handle. This gives one a good solid tool for prying the frames loose, and a brush for brushing off the bees with the other end of it. I do not know who makes these brooms or brushes; but I think there would be a big sale for them if advertised in the right way.

I think the finest guavas I ever ate (and I think I ate pretty nearly a plateful) were at friend Hochstein's. They grow wild all over his ranch. In fact, some of the finest tropical fruits grow out in the fields or woods, ofttimes wasting their sweetness on the desert air. Guavas are so plentiful and cheap that you can buy a good-sized brick of guava jelly for only a dime.

I know friend H. carries out his threat—at least to some extent — of hauling away his honey by night, for I rode over to the station between three o'clock in the morning and daylight, on his ox-cart containing a load of honey.*

MR. WOODWARD'S APIARY NEAR MATANZAS.

Mr. de Beche told me I must certainly visit Matanzas and Cardenas. He said, after I got hold of Mr. Woodward I would get along all right; but he added that I would not be likely to find anybody who could speak English, on the way to Matanzas. After worrying people along the way about as usual, because I could not speak their language, I finally got hold of Mr. C. E. Woodward in the great store and warehouse of J. Landetta. Mr. W. was just getting into a saddle to visit some one of the seven apiaries; but he put his horse up and went with me over to his home in Guanabana. On the way over, he told me something of his history as follows:

Three years ago he became discouraged about bee-keeping in Florida, and put all of his worldly goods, bees included, on to a schooner, and set sail for Cuba; but when he undertook to land his bees the Cuban officials interfered and said he was transgressing some of their laws, and proceeded to confiscate the whole outfit. He remonstrated, and tried in vain to explain to them that it would be his financial ruin; that the bees would have to be set out on the ground and have a fly or they would all die. Either the Spanish official did not understand or did not care. In desperation he went to Mr. Landetta, a wealthy business man of Matanzas. By the aid of an interpreter he managed to tell his story. Mr. Landetta was touched by the story of the poor man's distress, and proposed to Mr. Woodward to go in company with him in the bee business. Of course, our good friend Mr. Woodward accepted the proposition, for he was like a drowning man catching at straws. Mr. Landetta went to the Spanish officers, and said, "Those bees belong to me, and this man is in my employ. You let him take the bees and other stuff off from that boat."

The Spanish officials grumbled somewhat, but Mr. Landetta had wealth and influence at his command, and they were obliged to submit. We bee-keepers can imagine with what a feeling of relief Mr. Woodward straightened himself up, took a big breath of fresh air (this was Cuban air) as he rolled up his sleeves and went to work. Well, he is at work yet—at least I suppose he is. He had 50 colonies of bees to start with. In three years these 60 colonies with the assistance of 600 three-frame nuclei which he purchased of Fred Craycraft,* have been increased to 2000 colonies located in seven apiaries. Friend Woodward now takes care of one of the seven apiaries at his home, and superintends the management of the other six. He told me the greatest part of his time was spent in the saddle, riding from one apiary to the other. His partner, Mr. Landetta, furnishes the capital and he furnishes the brains to manage, or at least they have some sort of partnership that seems to be satisfactory. When I was there they were filling one order that amounted to about $16,000. I believe this was extracted honey to go to Germany.

I now wish to tell you a little about Mr. Woodward's home. His house and apiary are located in an old fruit-orchard or garden. Unlike the rest of the Cuban apiarists, he insists on having every hive located at least seven or eight feet from every other one. In fact, the plan is very much like the hexagonal apiary described in the A B C book. The ground is kept clear of weeds and rubbish by hoeing; and to avoid disturbance from the bees I think most of the hoeing is done by moonlight. They have plenty of moonlight nights in Cuba, and it is a cooler time to work than when the sun shines. I told him I was afraid our American men would make a kick about working nights as well as days—want double pay, or something of that sort. He said he did not find any trouble about getting his helpers to clean up around the hives by moonlight. Several times, you may remember, I have said, "This apiary is the handsomest one I ever saw in all my life." Well, when I was at friend Woodward's I told *him his* was the pleasantest-looking apiary I ever saw in my life anywhere. Our apiary at Paso Real looks very handsome with its mathematical accuracy, but it is right out in the sun. Friend W's is

*While I write, the following letter is put in my hand:

MR. ROOT:—I hope you did not suffer any ill effects from your buggy-ride in an ox-cart through the rain. Next time we will take a canvas cover along.

Punta Brava, Cuba. C. F. HOCHSTEIN.

The above brings vividly to mind the experiences of that night in the ox-cart. When we started out, the moon and stars were shining only as they do shine away down in that tropical land, and every thing was lovely. But an hour later the clouds came up, and the rain began to fall; and as I had no clothing but a new Cuban suit of thin linen I was in somewhat of a predicament. But it did not hurt me any, for the sun shone out bright soon after rising.

* Mr. Fred Craycraft, whom many of our older readers will recognize, is now a custom-house officer in Havana. He has been a bee-keeper all his life, and wrote articles for *Juvenile Gleanings* more than twenty years ago. Well, now I am going to tell a story of what can be done in Cuba. If I do not get it straight, friend Craycraft will have to correct me. A year ago last January he took 100 nuclei, to see what he could do with them. Before July, from these 100 he sold to Mr. Woodward the 600 three-frame nuclei, and had 150 left. He reared all the queens himself, with the exception of 100 which he purchased of J. B. Case, of Port Orange, Fla. Mr. Woodward paid him $1500 for the 600 nuclei, or $2 50 each.

all in the dense shade of tropical trees. His bees are all a fine strain of Italians. Just let me say something to the readers of GLEANINGS right here.

Ernest has been pretty thoroughly criticised, not only in GLEANINGS, but in other bee journals, for suggesting that our red-clover queen was worth $200. Now, mind you, I am not going to advertise *our* queens this time. Friend W. got his best queen of our veteran friend Doolittle. He paid $10 for her, and then paid for a nucleus besides to ship her in, so as to have her come in good order ready for breeding. He has stocked the whole apiary I saw, with queens from this Doolittle queen. The hives are mostly two-story, and some of them three-story. The bees are nicely marked, gentle to handle, and good workers.

"Friend Woodward, how much do you suppose that Doolittle queen has been worth to you—that is, how much money has this apiary given you because of the fact that every queen is of that Doolittle strain instead of being of the hit-and-miss kind which most of the Cuban bee-keepers get along with? Haven't you actually saved $200, the price Ernest put on our choice queen?"

"Why, Mr. Root, that Doolittle queen has been worth *five hundred dollars* to me, counting the queens I have reared from her that have been used to stock others of our apiaries; and I am testing some of her daughters with the view of using them for breeders when she is gone."*

Now, friend Woodward may have been a little extravagant in the above; but I will leave it to our veterans in bee culture—is it not possible that a bee-keeper can be benefited to the extent of hundreds of dollars by *starting business* with a queen that is superior as a breeder?

Mr. Woodward has another trick in extracting that may not be new, and, in fact, I think I have heard of it before. We will suppose you have a two-story hive and a strong colony of bees, and the combs are nearly ready to extract — that is, the bees have begun capping some of them in the center. Now, instead of extracting these combs and putting empty ones in their place, suppose you lift this upper story up and put a story of *empty combs* right under it; while the bees are finishing the capping of the top story, they will have the second one pretty well filled with raw honey; then when the top story is ready to extract, lift up the second, and put another story of empty combs under it as before.

Friend W. uses ten-frame Dovetailed hives containing Hoffman frames. He says that, where an apiary is often intrusted to a man who is not very much experienced, he very much prefers Hoffman frames, for then one can not make bad spacing. Now, Moe, Hochstein, Howe, and perhaps all the bee-men west of Havana, will not have a Hoffman frame on the premises. What are you going to do about it? Mr. Woodward is certainly successful; his apiaries are neat and tidy; he gets the honey, and his bees are so handled that they are not cross to work with. His combs are all made of full sheets of foundation on wired frames. His wife had been making foundation, with the help of a Cuban boy, the day I arrived.

By the way, friend W. has a model home. It is more after the fashion of the Florida buildings. His library and sleeping-rooms are upstairs; and, while I think of it, I believe very good authority has decided that, in the exceedingly damp climate of Cuba, an upstairs sleeping-room is to be preferred. The air is so damp most nights—that is, there are such heavy dews—that, if you should leave a sheet on the clothes-line over night, in the morning it would be almost as wet as if it had been dipped in water.

Just one more thing about friend Woodward's home. Before we got into the house a pet parrot named Catara Real hurried out of the house to meet him with the most endearing expressions of love. I just had to have a good big laugh to see the parrot make such an ado at the sight of her owner. As she talked Spanish I could not tell what she said; but she climbed up his trowsers leg, got on his shoulder, rubbed her head against his face and neck, and nibbled his ears with her bill, and talked and talked and *talked*. She would never bite him too hard; but if anybody else touched her, or tried to, she would go into a fury right away. When he was out in the apiary among the bees, or when he was attending to his correspondence, she remained perched on his shoulder, and kept calling him loving names. At night, when it was bedtime, he put her up into a perch overhead; but she kept on talking to herself, and several times in the night I heard her familiar voice. You see, parrots in Cuba are almost in their native home. They would go into the tops of the tallest trees if their wings were not clipped.

Friend Woodward has a hive on scales, such as I pictured in the A B C book; and he watches these scales as a gardener watches the thermometer or barometer. When I was there, the hive on the scales was showing a yield of three or four pounds a day. If I am correct, he said he had secured as much as 300 lbs. of comb honey from one hive in one season. But a large yield of comb honey almost always means reducing the colony in strength until it is almost ruined; whereas, when the colony is run for extracted honey the queen has room to keep right on laying and raising brood. Several hives gave over 500 lbs. of extracted honey in a season. As a rule,

*After the above was dictated, Ernest received the following from friend Woodward. It is a little bit of a joke on your humble servant, but it sometimes does us good to get a glimpse of the way others see us.

MR. E. R. ROOT:—Your father did make me a call (which which was all too short), but I could not persuade him to stay longer. I saw very soon that he was a lover of the honey-bee, for he was in my apiary about all the time he was at my home, and it seemed to me he was a man who was always in a hurry. He would walk from one hive to another like lightning, and would take in the whole thing at a glance. I hope to see him again soon. C. E. WOODWARD.
Guanabana, Cuba, March 6.

queens do not last as long in Cuba as here in the North. The strain upon them, consequent on laying every day in the year, uses them up in about half the time it does here, where they have the winter for rest. One of his apiaries near Matanzas is very much like the one I have mentioned. A bright young American boy has charge of it. He showed me a hive that had given 322 lbs. this season, and the two upper stories were full of honey, and ready to extract. I have thought best to add a letter received from friend Woodward after I left:

Friend Root:—I have that last row of bee-hives put up in fine shape, and the apiary is all cleaned up, and looks nice indeed. I shall finish extracting in three days more, and that will make 28 tierces (of 1200 lbs. each) of honey up to date. I will keep you posted on my own apiary the coming season. I shall do some experimenting this coming season By the way, Bro. Root, I see in the new A B C book, that the bees in balling the queen sting her to death. In all of my experience with bees I have never known a queen to be stung by the bees balling her; but instead of stinging her they smother or suffocate her; but I have never found a queen, after she has been balled, to be of any value I have got foul brood all wiped out of my apiary, and I hope it will never show itself again.

The bees are getting a little honey at present. The scales indicated one pound to-night, the first time in several days. But brood-rearing has been kept up to a high point; so you see again I'm not troubled about my bees not having plenty of brood.

I am having young queens mated right along with no trouble Of course, I do not save every queen, but I save 90 per cent of them, and I did no better than that in Ohio or Florida. C. E. WOODWARD.

Guanabana, Cuba, March 5.

In speaking of Mr. Woodward's apiary I should have mentioned that he starts his nuclei in little boxes that hold four regular L. frames. He places these little boxes right where he is going to plant his next hive; and these boxes take the place of the regular hive until the queen has filled the combs with eggs, and the bees begin to be crowded. Then the box is taken away, and a one-story hive is put in its place. I saw these boxes at Mr. Fred Somerford's, and I believe they are used considerably in many apiaries. It not only answers the purpose of a full hive until the four combs are crowded with bees, but is lighter and easier handled. They are usually made of ⅜ or ½ inch lumber.

Now that I have said so much about handsome and convenient apiaries, I feel some hesitation—in fact, I *ought* to feel it—in speaking again about "the best-arranged apiary I ever saw." Can't help it, however. When I got to Mr. Fred Somerford's I spent two hours in his apiary, before he got home, and I was obliged to conclude he had an apiary that was at least in some respects ahead of any thing else I ever saw before. This apiary at Catalina was originally planned and built by our good friend Mr. de Beche, and he sold it to Mr. Somerford. It is an old fruit-garden. There are orange and banana trees, guavas, and ever so many other kinds of fruit growing so thick that the whole apiary is a dense shade. There are two rows of hives about ten feet apart, and these hives are pretty close together; in fact, I found it hard work to find an opening between two hives so I could readily walk through. You see I am taking back some things I have recently said about having each hive with space enough so one could walk all around it. There is a purpose, however, in having the hives so close. The alley between the back ends of the hives is about ten feet wide, as I have said, and it is kept perfectly clean, and the ground is smooth and level, so you can run a wheelbarrow or a cart without a bit of trouble. The reason the bees do not get mixed in regard to their entrances is on account of the dense shrubbery all around the entrances. The bees have to twist through nooks and crannies, each one to find its own home, and this fixes its location so it never misses it.

Now, the "crowning" part of this apiary is a shed of palm-leaves with the eaves so low that they come down pretty near the front ends of the hives, reaching beyond the entrance so that no storm blows in enough to wet the hives. His hives are perfectly protected from the weather, hence they need no paint; in fact, some writers have said they are better off without paint. Why, to get right down to it, this is almost a house-apiary, and I believe it is the first really successful one I have ever found. One remarkable thing about it is that there no bees under the shed in the alley. For one thing, it is too dark; and another is, it would be a little difficult for them to get inside on account of the thick shrubbery around the entrances; notwithstanding, the rubbish is cleared away enough so the bees have but little difficulty in getting in and out of their hives. The advantage of this arrangement is that the apiarist is always under shelter from sun and rain; in fact, I think he might extract right while it is raining. It is so dark inside that the bees hardly ever come in to sting the operator. When they are shaken off the combs they dart out under the eaves and go in at their own entrance. I was all around without protection, as I have said, for an hour or two; and, even though the bees were busily at work, not one attempted to sting me. There are three sheds in all, with perhaps 50 hives in a row on each side, making 100 hives to each shed. The sheds are arranged in the form of a letter E. If he had built one on the third side he would have had a regular hollow square.

The extracting-room is built at one corner. The combs are wheeled up an inclined approach so as to get into the upper part of the extracting-room, letting the honey go down through into a tank and then into barrels by gravity. To understand the arrangement better, I give a photo, taken by our departed friend Rambler. It might also be worth while for you to turn back to page 734 and read the description.

On p. 734, Sept. 1, Rambler tells us that, although Fred Somerford has used four and six frame extractors for a dozen years, he has settled down on a two-frame "Novice" machine. In fact, it is the very thing that your humble servant, A. I. Root, de-

vised, and has recommended for years past. It is very much cheaper than any other extractor; It is light to handle, and ever so much easier to carry around in a wagon to out-apiaries; and I have kept saying for years that one who is an expert with that old Novice L. frame extractor could get out more honey in proportion to the help employed than with any of the big ones. Mr. Somerford told me that he has for some time wanted to express his approval of the improved Novice extractor recently purchased. He says it works ever so much easier than his old one, and yet the price was only $8.50.

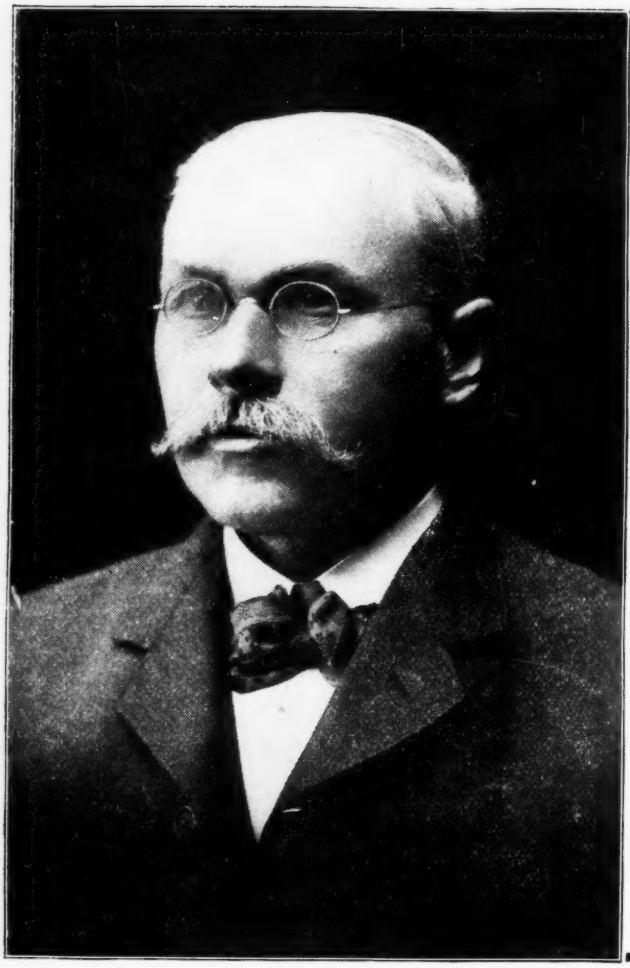
When I wrote up my visit of two days to Güines I did not mention two apiaries I visited. One of them belongs to Mr. de Beche. It is about half way between Havana and Güines. I hope my good friend Mr. de Beche will excuse me if I say there is not very much "style" about this apiary that is managed by a young Cuban who does not talk English. He does pretty much all the work himself, and manages to "round up" at the end of the year with a very good profit indeed, on the credit side of the books. Mr. de Beche told me that I would find many things to criticise; but he added that, so long as the apiary yielded him good returns — a much better per cent than some where high-priced Americans kept every thing in "good order" — he thought I ought to be a little bit easy in my criticisms. By the way, it behooves all of us northern people to go slow about finding fault with the way people do things in other climates. This young Cuban, for instance, will take out not only frames of honey, but filled sections from hives, and close the hive up without putting any thing in its place. At his next visit there are, of course, pieces of beautiful snowy-white comb attached to the cover right above where the section was left out. The boy tears off these pieces of comb and throws them in a heap in the honey-house, and he had a pretty good-sized heap when I was there. The owner replies, "What does this matter when one gets a greater yield of wax than from almost any other apiary, and 1 lb. of wax is worth about 16 times as much as 1 lb. of honey?" "By their fruits ye shall know them."

Another thing, this boy, when he was in a great hurry, did not bother to smoke the bees out of the way or smoke them off when he shut the cover down. The consequence was, the bees began to sting before I got through the gate leading to the apiary; but on the other hand, as before, he gets more honey in proportion to the *pay* he receives than almost any other apiarist. I wonder if he has not run across the "Lightning Operator," Harry Howe, and got some hints, that enable him to get through with the work in an apiary expeditiously.

When near the town of Güines I visited another apiary, also managed by Cubans, and, I believe, quite successfully. It belongs to Dr. Toribio del Viller, of Güines. My friend Senti took me to the doctor's home and introduced me. When the doctor arose from his seat he said smilingly in substance, "Why, my dear Mr. Root, it affords me *very* great pleasure to look into your face and take you by the hand. Not only do I owe to you all I know about bee-keeping and all I have accomplished on that line, but, my dear sir, I am actually indebted to you for the fact that I know enough of the English language to speak, read, and write it, at least to some extent."

The doctor then explained that, some years ago, he became very much interested in bees. Knowing no language but the Spanish, he procured all the bee-books in that tongue; but they were so very unsatisfactory, and so much behind the times, as he found out by seeing the work of a few American bee-keepers who had just located near there, that he bought the A B C book, even though he could not read it. Of course, he could look at the pictures, and with the help of an interpreter he got hold of enough to make him really thirsty for more; and he actually learned English in order that he might read the A B C book; and, of course, he was delighted to find what a new world was opened to him in the line of other literature when he could read English.

Now, friends, if you are still interested in what I have been telling you about the apiaries of Cuba and their managers, it will pay you to read again what Rambler wrote last year.



This Man

has kept bees 25 years. He makes sure of a crop by having out-apiaries widely scattered. He has learned how to manage them with very few visits. One 50 miles from home, established two years ago, is visited only four times a year, yet the profits have averaged $150 a visit. He tells all about it in the Bee-Keepers' Review for March. Send ten cents for this number, and with it will be sent two other late but different issues, and the ten cents may apply on any subscription sent in during the year. A coupon will be sent entitling the holder to the Review one year for only 90 cents.

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